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TIDAL POWER CORPORATION

ANNUAL REPORT

1989 - 1990

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NOVA SCOTIA

TIDAL POWER CORPORATION

Report by the President
On the Affairs of the Corporation
For the year ending March 31, 1990

During the last year substantial changes have occurred at the Tidal Power Corporation (TPC). A new board of Directors and Officers was appointed effective December 1, 1989. Budget reduction from $286,600 to $80,000 for the 1989/90 fiscal year resulted in a downsizing of the Corporation and a reduction in scientific activities. Daily operations of the TPC have been integrated into the operation of the Energy Management Division of the Department of Mines and Energy. TPC will retain it's status as a crown corporation, however professional, technical and administrative activities will be performed by Departmental staff.

The Officers and Directors of the Corporation are:

OFFICERS

CHAIRMAN - Hon. Jack MacIsaac
PRESIDENT - Ron Barkhouse
SECRETARY/TREASURER - Carroll James

DIRECTORS

Hon. Jack MacIsaac
Ron Barkhouse
John J. Laffin, D. Eng.
Louis Comeau

Carey Ryan, P. Eng.
Greg Haverstock, P. Eng.
Allan Parker, P. Eng.
Terry MacDonald, P. Eng.

During 1989/90 the Tidal Power Corporation funded and guided technical investigations related to fish mortality at the Annapolis Generating Station, and to sedimentation movement and buildup in the Cumberland Basin associated with Tidal Site A8. A brief description of each of these studies and results to date follows:

1. **FISH MORTALITY STUDY** - Annapolis Tidal Generating Station: This work is part of an ongoing five year investigation to study the effects of the Annapolis Tidal Station turbine on American Shad. Diversion work, described below, has been partially successful in keeping adult shad from passing through the turbine. Success in diverting juvenile fish however, has been poor resulting in mortality of young fish migrating to the sea for the first time. The reason for the five year cycle is the length of time required from a fish hatching in the river to their return from sea to the river for spawning. Male shad return in their fourth and fifth years while females return mainly in the fifth and sixth years. This year (1990) marks the first year that all fish returning would have gone to sea after the turbine was placed in operation. Mortality investigations will continue on the river this year. This work is being done by BIO-ID Limited of Chester, Nova Scotia. Cost of the study work carried out in fiscal 1989/90 was $14,996.00.

2. **FISH DIVERSION STUDY** - Annapolis Tidal Generating Station: This study was completed by Monenco Maritimes Limited for the Nova Scotia Power Corporation with $40,000 in total financial assistance from the Tidal Power Corporation, $5,000.00 of

which was paid in 1989/90. The work consisted of the design, manufacture and installation of various underwater sound producing devices intended to prevent fish, primarily American Shad, from passing through the turbine. Results obtained by an earlier study by Ontario Hydro indicated that sound producing units such as hammer devices are successful in diverting adult fish but do not have the same effect on juvenile fish. The p oject work by Monenco Maritimes Ltd. was not completed early enough in the year to actually test the devices since most of the fish had already left the river. The Nova Scotia Power Corporation intends to operate the sound devices during the coming fish movement season and may do some net testing to count fish passing through the turbine both with and without the sound devices operating. Significant mortality in juvenile fish could lead to reduced spawning populations in future years, although there is some evidence from the Ontario Hydro work that juvenile fish are less likely to be physically damaged by passing through the turbine than are the adults.

3. **SEDIMENTATION STUDY** - Cumberland Basin:

This work is being done by ASA Consultants Limited of Dartmouth for Environment Canada, Energy Mines and Resources Canada and the Tidal Power Corporation. Tidal Power's commitment was to fund certain parts of the data acquisition phase of the work which was completed in fiscal year 1989/90. The Consultant is currently completing the draft of the data report and expects to deliver this draft in early June 1990. Mathematical modelling of sedimentation movement and buildup in the basin will be completed over the summer months with a final report issued for the project in September or October 1990. Tidal Power's total financial contribution to this study was $40,000 of which $4,000.00 was paid in fiscal year 1989/90.

ADMINISTRATIVE AND FINANCIAL

One meeting of the Board of Directors was held during the year.

The Corporation operated within its reduced budget for the year 1989/90. Research expenditures totaled $23,996.00 during the year. Audited statements for the year ended March 31, 1990 have been completed and will be available for review by the Directors at the annual meeting.

Dated May 30, 1990.

All of which is respectfully submitted.

Ronald Barkhouse
President

Tidal Power Corporation
Financial Statements
March 31, 1990

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Auditors' Report

To the Chairman and Directors of the
Tidal Power Corporation

We have examined the balance sheet of the Tidal Power Corporation as at March 31, 1990 and the statement of income and surplus for the year then ended, and have obtained all the information and explanations we have required. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion and according to the best of our information and the explanations given to us and as shown by the books of the Corporation, these financial statements are properly drawn up so as to exhibit a true and correct view of the financial position of the Corporation as at March 31, 1990 and the results of its operations for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Doane Raymond.

May 3, 1990
Halifax, Nova Scotia

Chartered Accountants

Tidal Power Corporation
Balance Sheet

	March 31 1990	March 31 1989
Assets		
Current		
Cash and short term deposits	$ 20,351	$ 71,491
Accounts receivable		62,153
	20,351	133,644
Office furniture, at cost less accumulated depreciation of $120 (1989 - $5,849)	7,058	16,021
	$ 27,409	$ 149,665
Liabilities		
Current		
Payables and accruals	$ 9,619	$ 131,159
Surplus		
Surplus	17,790	18,506
	$ 27,409	$ 149,665

On behalf of the Board

Director

Director

Tidal Power Corporation
Statement of Income and Surplus

	Year Ended March 31	
	1990	1989
Income		
Province of Nova Scotia (Note 2)	$ 80,000	$ 286,800
Interest	538	2,384
	80,538	289,184
Expenses		
Administration, promotion and travel	52,622	104,119
Audit	1,250	1,200
Depreciation - office furniture	1,407	1,092
Directors' fees	700	1,600
Legal	1,279	4,814
Research studies (Note 3)	23,996	176,753
	81,254	289,578
Excess of expenses over income	716	394
Surplus, beginning of year	18,506	18,900
Surplus, end of year	$ 17,790	$ 18,506

Tidal Power Corporation
Notes to Financial Statements
March 31, 1990

1. The Tidal Power Corporation was established by Chapter 21 of the Statutes of Nova Scotia, 1970-71. Order-in-Council 71-379 proclaimed that Chapter 21 of the Statutes of Nova Scotia 1970-71, the Tidal Power Corporation Act, came into force on the 22nd day of April, 1971.

2. Pursuant to Section 16 of the Tidal Power Corporation Act, funds for the purpose of carrying out the objects and powers of the Corporation were obtained from the Province of Nova Scotia. Income for the current year is $80,000 (1989 - $286,800).

3. Research Studies

Research expenditures, for the purpose of defining or mitigating impacts of large-scale tidal power development, were comprised of the following:

Cumberland Basin - sedimentation study	$ 4,000
Fish mortality	5,000
Annapolis shad study - spawning habits	14,996
	$ 23,996